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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/157,318	09/21/98	KANEMITSU	T

EXAMINER

QM12/1024

COMPTON, E

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ART UNIT	PAPER NUMBER
3726	18

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Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.	Applicant(s)
09/157,318	Kanemitsu et al.
Examiner	**Art Unit**
Eric Compton	3726

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on *Sep 17, 2001*

2a) ☐ This action is **FINAL.** 2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1-6 and 8* is/are pending in the applica

4a) Of the above, claim(s) _____ is/are withdrawn from considera

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *1-6 and 8* is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claims _____ are subject to restriction and/or election requirem

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.

12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

13) ☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

a) ☒ All b) ☐ Some* c) ☐ None of:

1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

15) ☒ Notice of References Cited (PTO-892)

16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____

18) ☐ Interview Summary (PTO-413) Paper No(s). _____

19) ☐ Notice of Informal Patent Application (PTO-152)

20) ☐ Other:

DETAILED ACTION

Remarks

1. In view of the appeal brief filed on September 17, 2001, PROSECUTION IS HEREBY REOPENED. A new ground of rejection is set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

(a) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,

(b) request reinstatement of the appeal.

If reinstatement of the appeal is requested, such request must be accompanied by a supplemental appeal brief, but no new amendments, affidavits (37 CFR 1.130, 1.131 or 1.132) or other evidence are permitted. See 37 CFR 1.193(b)(2).

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless --
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-6 and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by US Patent 5,396,787 to Kanemitsu et al.

Kanemitsu et al disclose a method of forming an annular member, comprising the steps of: forming a disc-shaped sheet to have a non-processed portion including a stepped portion (Figure 4); rotating the disc-shaped metal sheet material; pressing the outer periphery of the sheet metal sheet in a radially inward direction, while continuing to rotate the metal sheet material (Figure 1B); thickening the outer periphery axially and without bucking by said pressing (Figure 1C); protruding the outer periphery to either side of the non-processed portion of the metal sheet material (Figure 1D); and forming a peripheral wall protruding to either side of the non-processed portion (Figure 1E).

Regarding claim 2, Figure 1C of Kanemitsu et al shows a thickening operation such that a preliminary peripheral wall is formed having a center portion that is more outwardly swelled in the center than at the ends. The shape of the outer periphery can be considered arc-shaped.

Regarding claim 3, Figure 1C of Kanemitsu et al shows the thickening operation in which the outer periphery has a bead that can be considered substantially circular. Note, it is inherent that a roller is engaged gradually, therefore the bead begins taking on a substantially circular shape in advance of forming of a preliminary peripheral wall.

Regarding claim 4, Figure 2A-2D of Kanemitsu et al show the metal sheet held between a pair of dies and pressing a forming roller (21) against the outer periphery of the metal sheet. The forming roller and the metal sheet are thereby rotated together.

Regarding claim 5, Figure 2B of Kanemitsu et al shows a thickening operation such that a preliminary peripheral wall is formed having a center portion that is more outwardly swelled in the center than at the ends. The shape of the outer periphery can be considered arc-shaped.

Regarding claim 6, Figure 2D of Kanemitsu et al shows a finishing step that results in a protruding peripheral wall on either side of the clamped portion in a predetermined shape.

Regarding claim 8, Kanemitsu et al teach first forming the non-processed section into a stepped portion as disclosed in column 2, lines 61-67: "First there is prepared a steel plate **1** the peripheral portion of which has a flat section as shown in **FIG. 1A**. Generally, the steel plate **1** is a disc-like plate as shown in **FIG. 3** and has a thickness of 2.0 mm for example. Alternatively, the steel plate **1** may be a flanged cup-shaped member as shown in **FIG. 4**."

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1-6 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 5,440,796 to Deggau et al in view of US Patent 3,700,382 to Pacak.

Deggau et al teach forming an annular member from a metal sheet by rotating a disk of metal sheet clamped between the dies (2, 2') that is not subjected to the metal working processing

that the outer periphery is subjected to, pressing the outer periphery of the material in a radially inward direction while rotating the metal sheet, thickening the outer periphery by pressing, protruding the outer periphery to either side of the clamped portion, and forming a peripheral wall (44) to either side of the clamped portion.

However, Deggau et al do not teach forming the annular (disc-shaped) member to have a non-processed portion prior to pressing the outer periphery, nor pressing the outer periphery without buckling.

Pacak discloses a method of forming an annular member, in which a disc-shaped metal sheet having a non-processed portion including a stepped portion is provided prior to the step of radially pressing the outer periphery of the metal sheet. With regards to the preliminary step shown in Figure 1, "The anvil member 35 is here shown as having a central axial stem portion or boss 46 which enters the recess of the cup-shaped cup portion 20 of the blank 123 and the clamping member 36 is provided with a cup-shaped mating central axis recess 47 for receiving the hub of the blank, so that the cooperation of these portion of the workholder members with the blank will result in the blank being securely held therebetween with the flat annular edge portion 12 projecting radially into or through the work groove 45" (col 4, lines 48-59).

Regarding claim 1, it would have been obvious to one of ordinary skill in the art, at the time of invention, to have formed the annular member having a non-processed portion prior to pressing the outer periphery in the method of Deggau et al, in light of the teachings of Pacak, in order to more securely hold the metal blank between the dies.

Regarding claim 2, Figure 2b of Deggau et al shows a thickening operation such that a preliminary peripheral wall is formed having a center portion that is more outwardly swelled in the center than at the ends. The shape of the outer periphery can be considered arc-shaped.

Regarding claim 3, Figure 2b of Deggau et al shows the thickening operation in which the outer periphery has a bead (12) that can be considered substantially circular. Note, it is inherent that roller (21) is engaged gradually, therefore the bead begins taking on a substantially circular shape in advance of forming of a preliminary peripheral wall.

Regarding claim 4, Figure 2b of Deggau et al shows the metal sheet (1) held between a pair of dies (2, 2') of a rotational drive tool and pressing a forming roller (21) against the outer periphery of the metal sheet. The forming roller and the metal sheet are thereby rotated together.

Regarding claim 5, Figure 2b of Deggau et al shows a thickening operation such that a preliminary peripheral wall is formed having a center portion that is more outwardly swelled in the center than at the ends. The shape of the outer periphery can be considered arc-shaped.

Regarding claim 6, Figure 10 of Deggau et al shows a finishing step that results in a protruding peripheral wall on either side of the clamped portion in a predetermined shape.

Regarding claim 8, Figure 1 of Pacak shows that the flanged cup-shaped member is formed before the pressing step.

6. Claims 1-6 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 5,396,787 to Kanemitsu et al in view of US Patent 3,700,382 to Pacak.

Kanemitsu et al disclose a method of forming an annular member, comprising the steps of: forming a disc-shaped sheet to have a non-processed portion including a stepped portion (Figure 4); rotating the disc-shaped metal sheet material; pressing the outer periphery of the sheet metal sheet in a radially inward direction, while continuing to rotate the metal sheet material (Figure 1B); thickening the outer periphery axially and without bucking by said pressing (Figure 1C); protruding the outer periphery to either side of the non-processed portion of the metal sheet material (Figure 1D); and forming a peripheral wall protruding to either side of the non-processed portion (Figure 1E).

However, Kanemitsu et al do not explicitly disclose why the step-shaped portion is used, and Applicant argues that it is not clear from the disclosure of Kanemitsu et al whether the step-shaped portion is formed before or after pressing.

Pacak discloses a method of forming an annular member, in which an a disc-shaped metal sheet having a non-processed portion including a stepped portion is provided prior to the step of radially pressing the outer periphery of the metal sheet. With regards to the preliminary step shown in Figure 1, "The anvil member 35 is here shown as having a central axial stem portion or boss 46 which enters the recess of the cup-shaped cup portion 20 of the blank 123 and the clamping member 36 is provided with a cup-shaped mating central axis recess 47 for receiving the hub of the blank, so that the cooperation of these portion of the workholder members with the blank will result in the blank being securely held therebetween with the flat annular edge portion 12 projecting radially into or through the work groove 45" (col 4, lines 48-59).

Regarding claim 1, it would have been obvious to one of ordinary skill in the art, at the time of invention, to have formed the annular member having a non-processed portion prior to pressing the outer periphery in the method of Kanemitsu et al, in light of the teachings of Pacak, in order to more securely hold the metal blank between the dies.

Regarding claim 2, Figure 1C of Kanemitsu et al shows a thickening operation such that a preliminary peripheral wall is formed having a center portion that is more outwardly swelled in the center than at the ends. The shape of the outer periphery can be considered arc-shaped.

Regarding claim 3, Figure 1C of Kanemitsu et al shows the thickening operation in which the outer periphery has a bead that can be considered substantially circular. Note, it is inherent that a roller is engaged gradually, therefore the bead begins taking on a substantially circular shape in advance of forming of a preliminary peripheral wall.

Regarding claim 4, Figure 2A-2D of Kanemitsu et al shows the metal sheet held between a pair of dies and pressing a forming roller (21) against the outer periphery of the metal sheet. The forming roller and the metal sheet are thereby rotated together.

Regarding claim 5, Figure 2B of Kanemitsu et al shows a thickening operation such that a preliminary peripheral wall is formed having a center portion that is more outwardly swelled in the center than at the ends. The shape of the outer periphery can be considered arc-shaped.

Regarding claim 6, Figure 2D of Kanemitsu et al shows a finishing step that results in a protruding peripheral wall on either side of the clamped portion in a predetermined shape.

Regarding claim 8, Figure 1 of Pacak shows that the flanged cup-shaped member is formed before the pressing step. Furthermore, Kanemitsu et al teach first forming the non-processed section into a stepped portion as disclosed in column 2, lines 61-67: "First there is prepared a steel plate **1** the peripheral portion of which has a flat section as shown in **FIG. 1A**. Generally, the steel plate **1** is a disc-like plate as shown in **FIG. 3** and has a thickness of 2.0 mm for example. Alternatively, the steel plate **1** may be a flanged cup-shaped member as shown in **FIG. 4**."

Response to Arguments

7. Applicant's arguments filed in an Appeal Brief on September 17, 2001, have been fully considered but they are not persuasive for the new grounds of rejection cited above.

The Examiner agrees that Deggau et al do not disclose forming a stepped-shaped portion prior to forming a flange, however, both Kanemitsu et al and Pacak do.

Contact Information

8. Official documents related to the instant application may be submitted to the Technology Center 3700 mail center by facsimile at (703) 305-3579/3580. Should Applicant desire to submit a DRAFT response to the Examiner by facsimile transmission, then Applicant should contact the Examiner at the number below for instructions concerning the transmission of DRAFT documents. Applicant is reminded to clearly mark any facsimile transmission as "DRAFT" if it is not to be considered as an official response.

9. Any inquiry concerning this communication should be directed to Examiner Eric Compton at telephone number (703) 305-0240.

ebc
October 18, 2001

S. THOMAS HUGHES
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3700